



US 20110081368A1

(19) **United States**(12) **Patent Application Publication**
Hooper et al.(10) **Pub. No.: US 2011/0081368 A1**(43) **Pub. Date: Apr. 7, 2011**(54) **PROTEIN VACCINES AGAINST POXVIRUSES****Publication Classification**(76) Inventors: **Jay W. Hooper**, New Market, MD
(US); **Genoveffa Franchini**,
Washington, DC (US)(51) **Int. Cl.****A61K 39/275** (2006.01)**A61K 39/285** (2006.01)**A61P 31/20** (2006.01)(21) Appl. No.: **12/802,034**(52) **U.S. Cl. 424/186.1; 424/232.1**(22) Filed: **May 28, 2010**

(57)

ABSTRACT**Related U.S. Application Data**(62) Division of application No. 11/523,867, filed on Sep.
20, 2006, now Pat. No. 7,790,182.(60) Provisional application No. 60/722,082, filed on Sep.
21, 2005.

The invention described here entails a protein vaccine against poxviruses which contains at least two purified recombinant monkeypox virus proteins or peptides. The proteins or peptides are encoded by the open reading frames of the monkeypox ortholog genes M1R, A35R, A29L B6R, and orthologs of these proteins or peptides having 90% identity. The invention also entails a vaccine protocol against poxvirus whereby a vaccine is vaccinated with a first vaccine made up of a nucleic acid vaccine of three or more poxvirus virus genes, and subsequently vaccinated with at least one other booster vaccine made up of two or more poxvirus virus proteins.